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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/538,130

06/29/2006

Ghislaine Tissot

09879-00064-US

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23416

7590

02/19/2008

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EXAMINER

KUBELIK, ANNE R

ART UNIT

PAPER NUMBER

1638

MAIL DATE

DELIVERY MODE

02/19/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/538,130	<b>Applicant(s)</b> TISSOT ET AL.	
	<b>Examiner</b> Anne R. Kubelik	<b>Art Unit</b> 1638	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.  |

### **DETAILED ACTION**

1. Claims 1-16 are pending.
2. This application contains sequence disclosures that are encompassed by the definitions for nucleotide and/or amino acid sequences set forth in 37 CFR 1.821(a)(1) and (a)(2). However, this application fails to comply with the requirements of 37 CFR 1.821 through 1.825.

Sequence identifiers are missing from sequences on pg 17, lines 27-28 and 37-38; pg 18, lines 9-10 and 30-33; pg 19, lines 26-27; pg 20, lines 5, 13-14, 23-26; pg 21, lines 11-12; and pg 22, lines 4-5, 8.

Full compliance with the sequence rules is required in response to this Office action. A complete response to this Office action must include both compliance with the sequence rules and a response to the issues set forth herein. Failure to fully comply with both of these requirements in the time period set forth in this Office action will be held to be non-responsive.

### ***Claim Objections***

3. Claims 5, 11 and 14 are objected to because of the following informalities:

In claims 5 and 11, "SEQ ID No:1" should be replaced with --SEQ ID NO:1-- and "SEQ ID No:2" should be replaced with --SEQ ID NO:2--.

In claim 14, part (b), --and-- should be inserted at the end of the line.

### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

Art Unit: 1638

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-3, 6-8 and 13-15 are rejected under 35 U.S.C. 102(e) as being anticipated by Daniell (US Patent 7,129,391, filed 15 May 1998).

Daniell claims soybean, peanut and pea plants whose chloroplasts are stably transformed (claims 75-77 and 81-83) and a method of producing them (claim 92). Daniell indicates that stably transformed plants have progeny with the transformation event (column 7, line 10-13); thus, the plants must be fertile. The process inserts the expression cassette into an intergenic region (claim 84) and was done by particle bombardment (column 27, lines 39-67).

Daniell also claims plastid transformation vectors comprising an expression cassette encoding a selection marker two sequences homologous with a portion of a legume plastome, wherein the sequences flank an expression cassette encoding a peptide of interest (claims 3 and 95); the flanking sequences are homologous because they are competent to undergo homologous recombination with the plastid sequence of the target plant, and because they are used to produce the plastid-transformed soybean, peanut and pea plants of claims 75-77 and 81-83). The expression cassettes comprise 5' and 3' expression control sequences (claims 3 and 84), which include a Prn promoter and a psbA terminator (Fig 2).

### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a), which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 1638

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maliga et al (1999, US Patent 5,877,402) in view of von Allmen (1992, GenBank Accession No. X07675).

The claims are drawn to fertile transplastomic legumes, including soybeans, wherein the plants have been transformed with a plastid transformation vector comprising expression cassettes flanked by soybean plastid sequences from a region encoding the rRNA, trnV and rps12.

Maliga et al teach a method of tobacco plastid transformation by particle bombardment using a vector comprising expression cassettes comprising the aadA selection marker and a gene of interest, each operably linked to a plastid promoter and plastid terminators, wherein the expression cassettes are flanked by tobacco plastid sequences from a region encoding the 16S rRNA, trnV and rps12/7 (column 22, lines 13-30, column 22, line 59, to column 25, line 67; column 27, lines 14-59; column 51, line 59, to column 57, line 40; Fig 17C, 18, 19, 22).

McBride et al do not disclose a method of soybean plastid transformation a vector comprising expression cassettes comprising the aadA selection marker and a gene of interest, each operably linked to a plastid promoter and plastid terminators using a vector comprising expression cassettes flanked by soybean plastid sequences from a region encoding the 16S rRNA, trnV and rps12.

von Allmen teaches the sequence of the portion of the soybean plastid genome that encodes the 16S rRNA, trnV and rps12.

Art Unit: 1638

At the time the invention was made, it would have been obvious to one of ordinary skill in the art to modify the method of plastid transformation as taught by McBride et al, to replace the tobacco flanking regions with the corresponding ones from soybean plastid as described in von Allmen. One of ordinary skill in the art would have been motivated to do so because plastid transformation works by homologous recombination (Maliga et al, column 21 lines 30-45), and one of skill in the art would know that the higher the homolog between the targeting segment and the target, the higher the probability of transformation. Thus, one of skill in the art would wish to use a vector comprising soybean plastid targeting sequence when transforming soybean. one of skill in the art would use targeting sequences based on the sequence taught by von Allmen because it corresponds to the region MAliga et al has shown works effectively in tobacco and because the sequence for that region is readily available. Maliga et al teaches that the targeting segment should be relatively large (column 21. lines 46-55); thus one of skill in the art would use SEQ ID NO:1 and 2, or similar sequences, made by isolating the DNAs by PCR using primers based on von Allmen's sequence. The exact breakpoint would be one of personal choice, and one of skill in the art would reasonably choose the breakpoint such that one flanking region comprises the 16SrRNA and a portion of trnV and the other comprises the rest of trnV and rps12/7

### ***Conclusion***

8. No claim is allowed.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anne R. Kubelik, whose telephone number is (571) 272-0801. The examiner can normally be reached Monday through Friday, 8:30 am - 5:00 pm.

Art Unit: 1638

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anne Marie Grunberg, can be reached at (571) 272-0975.

The central fax number for official correspondence is (571) 273-8300.

Patent applicants with problems or questions regarding electronic images that can be viewed in the Patent Application Information Retrieval system (PAIR) can now contact the USPTO's Patent Electronic Business Center (Patent EBC) for assistance. Representatives are available to answer your questions daily from 6 am to midnight (EST). The toll free number is (866) 217-9197. When calling please have your application serial or patent number, the type of document you are having an image problem with, the number of pages and the specific nature of the problem. The Patent Electronic Business Center will notify applicants of the resolution of the problem within 5-7 business days. Applicants can also check PAIR to confirm that the problem has been corrected. The USPTO's Patent Electronic Business Center is a complete service center supporting all patent business on the Internet. The USPTO's PAIR system provides Internet-based access to patent application status and history information. It also enables applicants to view the scanned images of their own application file folder(s) as well as general patent information available to the public.

For all other customer support, please call the USPTO Call Center (UCC) at 800-786-9199.

Anne Kubelik, Ph.D.

February 19, 2008

/Anne R. Kubelik/

Primary Examiner, Art Unit 1638